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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,665	04/09/2004	Chien-Min Sung	22762	8792

7590 09/13/2006

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EXAMINER

RACHUBA, MAURINA T

ART UNIT	PAPER NUMBER
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3723

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/821,665

Applicant(s)

SUNG, CHIEN-MIN

Examiner

M Rachuba

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-13,27 and 30-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-13,27 and 30-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 June 2006 has been entered.

### ***Election/Restrictions***

2. Applicant's election without traverse of group 1 in the reply filed on 02 May 2005 is acknowledged.
3. Claims 14-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 02 May 2005.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-13, 27, 30-33, and 37-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruxvoort et al, 5,219,462 in view of Homola US

20040096705A1, as set forth in the Office action mailed 27 December 2005, and Boyd et al, 6,495,464.

6. Please refer to the previous Office action for the rejections based on '462 and '705. Applicant has further amended the claims to the abrasive layer being continuous. Neither '462 nor '705 teach a continuous layer of abrasive. '464, figure 2, teaches providing a patterned substrate with a continuous layer of abrasive and binder. It would have been obvious to one of ordinary skill in the art to have provided '462 with a continuous layer of abrasive and binder as taught by '464, figure 2 and column 3, lines 36-44, to minimize the cost of producing the tool by avoiding the use of masks or other blocking devices that would permit abrasive only on specific areas of the substrate.

7. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruxvoort et al, 5,219,462 in view of Homola US 20040096705A1 and Boyd et al, 6,495,464 as applied to claim 27 above, and further in view of JP 11-333706. '462 as modified by '705 discloses providing a polishing liquid during polishing, but not that the polishing liquid is a moderate solvent for the organic matrix; the polishing liquid substantially free of abrasive particles, or that the polishing liquid dissolves the matrix at points of contact at a rate from about 1 Angstrom/min to about 100 Angstrom/min. JP'706 teaches in a CMP process providing a polishing liquid to dissolve the matrix to free abrasive particles from an organic matrix in a fixed abrasive tool. It would have been obvious to one of ordinary skill to have provided '462 as modified by '705 with the polishing liquid as taught by JP'406, to allow fresh particles in the matrix to be uncovered and used. Regarding the rate of dissolving, JP '706 discloses that the

matrix is dissolved, inherently over time, and it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a dissolving rate of from about 1 Angstrom/min to about 100 Angstrom/min since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

8. Claims 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruxvoort et al, 5,219,462 in view of Homola US 20040096705A1 and Boyd et al, 6,495,464 as applied to claim 1 above, and further in view of Bruxvoort et al, 5,958,794. '462 as modified by '705 and '464 does not disclose the tool further comprising a filler material having a Moh's hardness less than 6, or that the polishing layer is substantially free of abrasive particles having a Moh's hardness greater than about 6, exclusive of the nanodiamond particles. '794, in an abrasive tool, teaches providing a filler material of a Moh's hardness of less than 5 and therefore an abrasive tool with a binder, abrasive and no abrasive particles having a Moh's hardness of greater than 5. It would have been obvious to one of ordinary skill in the art to have provided '462 with the filler material of '794, column 21, lines 46-51, to reduce the cost of the abrasive article, or to change the erodibility or abrasive characteristics of the article.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1, 4-13, 27, and 30-45 have been considered but are moot in view of the new ground(s) of rejection. The examiner agrees

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that Hibbard does not teach the invention as now claimed. However, '462 does disclose the invention as now claimed, except for the abrasive, taught by Homola.

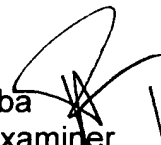
**Conclusion**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M Rachuba whose telephone number is 571-272-4493. The examiner can normally be reached on Monday-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M Rachuba  
Primary Examiner  
Art Unit 3723

  
9/9/06